

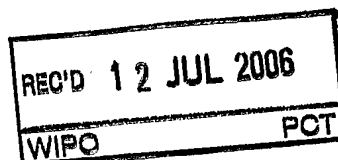
# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference <b>JL4198</b>	<b>FOR FURTHER ACTION</b> <div style="text-align: right;">See Form PCT/PEA/416</div>	
International application No. <b>PCT/GB2004/001414</b>	International filing date ( <i>day/month/year</i> ) <b>01.04.2004</b>	Priority date ( <i>day/month/year</i> ) <b>01.04.2004</b>
International Patent Classification (IPC) or national classification and IPC <b>INV. G03B21/28 A63J5/02</b>		
Applicant <b>MUSION SYSTEMS LIMITED et al.</b>		
1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of 7 sheets, including this cover sheet. 3. This report is also accompanied by ANNEXES, comprising: a. <input checked="" type="checkbox"/> <i>sent to the applicant and to the International Bureau</i> a total of 4 sheets, as follows: <input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> ( <i>sent to the International Bureau only</i> ) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).  4. This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I      Basis of the report <input type="checkbox"/> Box No. II     Priority <input type="checkbox"/> Box No. III    Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input checked="" type="checkbox"/> Box No. IV     Lack of unity of invention <input checked="" type="checkbox"/> Box No. V     Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI     Certain documents cited <input type="checkbox"/> Box No. VII    Certain defects in the international application <input type="checkbox"/> Box No. VIII   Certain observations on the international application		
Date of submission of the demand  <b>15.11.2005</b>	Date of completion of this report  <b>11.07.2006</b>	
Name and mailing address of the international preliminary examining authority:  <div style="display: flex; align-items: center;"> <div>                         European Patent Office                          D-80298 Munich                          Tel. +49 89 2399 - 0 Tx: 523656 epmu d                          Fax: +49 89 2399 - 4465                     </div> </div>	Authorized officer  <b>PAVON</b>  Telephone No. +49 89 2399-7086	



**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/GB2004/001414

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**Box No. I Basis of the report**

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- \* 1. With regard to the **language**, this report is based on
- ☒ the international application in the language in which it was filed
  - ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of:
    - ☐ international search (under Rules 12.3(a) and 23.1(b))
    - ☐ publication of the international application (under Rule 12.4(a))
    - ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))
2. With regard to the **elements**\* of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

**Description, Pages**

1-17 as originally filed

**Claims, Numbers**

1-25 received on 15.11.2005 with letter of 09.11.2005

**Drawings, Sheets**

1/4-4/4 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☒ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☒ the claims, Nos. 26-43
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

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**Box No. IV Lack of unity of invention**

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1. ☒ In response to the invitation to restrict or pay additional fees, the applicant has, within the applicable time limit:
- ☒ restricted the claims.
  - ☐ paid additional fees.
  - ☐ paid additional fees under protest and, where applicable, the protest fee.
  - ☐ paid additional fees under protest but the applicable protest fee was not paid.
  - ☐ neither restricted the claims nor paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is:
- ☒ complied with.
  - ☐ not complied with for the following reasons:
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☒ all parts.
  - ☐ the parts relating to claims Nos. .

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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	1-10
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-10
Industrial applicability (IA)	Yes: Claims	1-10
	No: Claims	

2. Citations and explanations (Rule 70.7):

**see separate sheet**

**INTERNATIONAL PRELIMINARY REPORT  
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International application No.  
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**Box No. V - Art. 33 PCT**

1. The present application does not meet the criteria set forth in Art. 33 PCT, because the image projection apparatus of **claim 1** is not inventive in the sense of Art. 33(3) PCT. Document **D1** (US 5 865 519; see FIG. 2) discloses an image projection apparatus comprising a projector 12, a frame 46,48,50,52 and an at least partially transparent screen 20:-
  - i. a frame 46,48,50,52 (see FIG. 5 and col 4 lines 32 to 54) being arranged to retain the screen under tension (see col 2 lines 48 to 65) by first and second retention members 22,24, such that the screen 20 is inclined at an angle with respect to a plane of emission of light from the projector (clear from FIG. 2 and col 2 lines 28 and 29);
  - ii. the screen 20 having a front surface arranged such that light emitted from the projector is reflected therefrom (clear from FIG. 1 or 2 and col 3 lines 61 to 63);
  - iii. the projector 12 being arranged to project an image 26 such that light forming the image impinges upon the screen 20 such that a virtual image is created from light reflected from the screen 20, the virtual image appearing to be located behind the screen (clear from FIG. 2), as already reasoned in section 1(b) *supra*.

Thus, the subject matter of claim 1 differs from **D1** in that the first and the second retention member comprise "respective" openings arranged therethrough to collocate with respective openings in the screen, wherein the openings are arranged to receive a fixing means so as to sandwich an edge region of the screen between the first and second retention members. It is noted that the "fixing means" are not included in the subject claimed *per se* (see Guidelines 5.37).

The effect of these features is to maintain the screen under tension between the upper and the lower portions of the frame so that the formation of wrinkles is reduced. However, the use of jaws, bolts and nuts as well as the use of tensioning straps are well known in the fields of pitching tents, sailing, projection screens, etc.

It appears that the skilled person would, in an obvious way, use the generally known method of using complementary openings on a foil (screen) and on a rigid frame so that the screen can be tightened by means of a cord, bolt and nuts or any other fixing means in order to secure the screen to the truss arrangement of the theatre.

Thus, the skilled person would arrive at an apparatus according to claim 1.

2. An analogous objection applies to method claim 11, for analogous reasons.
3. None of the dependent **claims** appears to contain any additional features which, in combination with the features of any claim to which it refers, meet the criteria of the PCT with respect to novelty/inventive step, the reasons being as follows:-
  - i. A 45 degrees inclined foil, partially reflective and which can be rolled according to **claims 2-5** is known from documents **D1** (see col 2 line 66, col 2 line 28 and col 2 line 53).
  - ii. The screen being attached to the frame according to **claim 6** is known from **D1** (see col 3 lines 58 to 60).
  - iii. The fixing details according to **claims 7-10** are standard for the skilled person routine in tightening screen foils in a theatre.
  - iv. analogous objection apply to the corresponding dependent method claims.

#### Art. 6 PCT

4. The expression "first and second retention member" has been used with two different meanings: (a) the upper and the lower retention means and (b) the two jaws with corresponding openings as shown in FIG. 4. This renders the subject matter, unclear, Art. 6 PCT.

**INTERNATIONAL PRELIMINARY  
REPORT ON PATENTABILITY  
(SEPARATE SHEET)**

International application No.

PCT/GB2004/001414

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**M. Pavón Mayo**

## CLAIMS

- 5 1. An image projection apparatus comprising a projector, a frame,  
and an at least partially transparent screen:  
the frame being arranged to retain the screen under tension by first and  
second retention members comprising respective openings arranged  
10 therethrough to collocate with respective openings in the screen, wherein  
the openings are arranged to receive a fixing means so as to  
sandwich an edge region of the screen between the first and second  
retention members, such that the screen is inclined at an angle with  
respect to a plane of emission of light from the projector;  
the screen having a front surface arranged such that light emitted from the  
15 projector is reflected therefrom; and  
the projector being arranged to project an image such that light forming  
the image impinges upon the screen such that a virtual image is created  
from light reflected from the screen, the virtual image appearing to be  
located behind the screen.  
20
2. An apparatus according to Claim 1 wherein the screen is a foil.
3. An apparatus according to Claim 2 wherein the foil is rolled about  
a cylinder when not in use.  
25
4. An apparatus according to any preceding claim wherein the screen  
is inclined at approximately  $45^\circ$  to the plane of emission of light from the  
projector.
- 30 5. An apparatus according to any preceding claim wherein the screen  
comprises a partially reflective layer upon the front surface.



6. An apparatus according to any preceding claim wherein the screen is attached to the frame at the screen's upper and/or lower edges.
- 5 7. An apparatus according to any preceding claim wherein at least one of the first and second retention members comprises an abrasive coating arranged to contact the screen.
- 10 8. An apparatus according to any preceding claim wherein the respective openings of the first and second retention members comprise respective openings therethrough arranged to collocate with openings in respective jaws of clamping members attached to tensioning straps.
- 15 9. An apparatus according to Claim 8 wherein the tensioning straps are attached to a truss arrangement or a fixed mounting point located in a permanent structure such as a wall, floor or ceiling and are adjustable such that the tension of the screen within the truss arrangement can be varied about the periphery of the screen.
- 20 10. An apparatus according to Claim 9 wherein the retention members are substantially parallel to truss members comprising the truss arrangement.
- 25 11. A method of providing the frame and screen according to any preceding claim comprising the steps of:
- (i) resting a frame upon a number of elevation means;
  - (ii) attaching leg sections to the frame;
  - (iii) increasing the height of the elevation means;
  - (iv) adding further leg sections;
  - 30 (vi) attaching a lower edge of a screen to a first retention member on a lower rear piece of the frame;

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- (vii) raising an upper edge of the screen to adjacent an upper front section of the frame; and
- (viii) attaching the upper edge of the screen to a second retention member on the upper front section of the frame.
- 5 (ix) securing the screen in position using respective fixing means passing through both respective retention members and the screen.
12. The method of Claim 11 comprising providing the elevation means in the form of a jack.
- 10 13. The method of either Claim 11 or Claim 12 comprising providing the screen in the form of a film.
14. The method of Claim 13 comprising removing a roll of screen film
- 15 from a protective cylindrical casing
15. The method of either Claim 13 or Claim 14 comprising laying the screen upon a dust-free protective sheet.
- 20 16. The method of any one of claims 11 to 15 comprising locking means arranged to lock the respective fixing means in position.
17. The method of any one of claims 11 to 16 comprising attaching tensioning means to either, or both, of the respective retention members.
- 25 18. The method of Claim 17 comprising attaching the tensioning means adjacent at least some of the respective fixing means.
19. The method of either Claim 17 or Claim 18 comprising attaching
- 30 the tensioning means associated with the retention member attached to the lower edge of the screen to a lower rear piece of the frame in step (vi).

21

20. The method of either Claim 17 or Claim 18 comprising attaching the tensioning means associated with the retention member attached to the upper edge of the screen to an upper front piece of the frame in step  
5 (viii).

21 The method of any one of Claims 17 to 20 comprising providing the tensioning members in the form of ratchet straps.

10 22. The method of any one of Claims 17 to 21 comprising tensioning each of the tensioning means such that the screen is flat and substantially wrinkle free.

15 23. The method of any one of Claims 11 to 22 comprising attaching a rope to the second retention member and passing the rope over the upper frame and using the rope in step (vii) to raise the screen.

24. The method of any one of Claims 11 to 23 comprising forming the frame from a truss work.

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25. A frame and screen constructed according to any one of Claims 11 to 24.